Teachers' Attitude towards Integrating ICT in Teacher Education

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*Abstract***:** *ICT has brought many challenges and opportunities and influenced the world like no other invention in the recent past. The field of education has also got greatly influenced by ICTs, which certainly altered whole education process. Hence, teacher educators are required to have positive attitude along with adequate knowledge and use of ICT tools and devices in educational process in case they wish to utilize current techniques and technologies effectively for prospective teachers. The purpose of this study is to investigate the attitude of teacher-educators towards the use of ICT along with knowledge and levels of ICT tools and devices usage among teacher-educators in teaching training colleges. A self-prepared interview guide was used in the present study. A purposive sampling technique was employed in the selection of the sample of as many as 50 teacher-educators working in different teacher-training colleges in the State of Haryana, India. The findings of the study revealed that the teacher-educators have positive attitude to some extent towards the ICT and its tools and devices usage in teacher education process. The present finding discloses that teacher-educators have lack of training and technical support. The current study also exhibits that teacher-educators also have some anxiety towards using ICT tools and devices during teaching learning process. As well as teacher-educators are also lacking of motivation and enthusiasm towards the use of ICT tools and devices in teacher-education process. It was found that if ICT-training, technical support, resources of ICTs, motivation, support of management as well as benefits of ICT in education process acquainted to the teacher-educators then they can successfully incorporate ICT in teacher education process.*

*Index Terms***:** *Attitude, Information and Communication Technology (ICT), teacher educators, teacher-training colleges.*

I. INTRODUCTION

Teachers are the effective and dominating factors among the ones contributing to educational improvements. The success of any educational practices depends on the knowledge and attitude of the teachers' towards the use of ICT in teaching learning process. (Zhao, Tan and Mishra, 2001). Teacher's attitude plays a crucial role in the adoption and implementation of ICT in education. It is immensely crucial to recognize the attitudes of teacher-educators towards ICT tools or devices use in teaching learning process since they are amid the foremost people that have an influence on prospective teacher's knowledge (McCarrick & Li, 2007). Though, studies show that teacher-educators lack the necessary ICT knowledge and skills. The attitude of the teacher-educator towards practicing ICT tools and devices in educational process is also a foremost aspect to know that how effective technology has integrated and improved the teaching learning process. (Tabata & Johnsrud, 2008). A widespread study survey by Blanket et al. (2006) show that teacher-educators' practices are not changing much when they use ICT because of their attitudes but it also stated that educators with highly positive approach use ICT in teaching learning process in a further project-oriented, collective and empirical way than other educators. Bingimlas (2009), stated that teacher-educators who are assured using ICT in teaching learning process approve that new technologies benefit them to teach effectively and would like to apply them more in the future. Voogt (2010), established that educators who apply ICT tools and devices widely in their teachings incline to have a great level of sureness in pedagogical technology abilities and emphasis on a learner-centered approach.

Attitude is a tendency to respond positively or negatively towards a certain idea, object or situation. Attitudes towards the use of ICT are inclined by different variables such as training (Tsitouridou & Vryzas, 2003), awareness about technological devices (Mukti, 2000), technology anxiety and liking (Yildirim, 2000), and know-how of technological devices used in teaching learning process (Kumar & Kumar, 2003). In utmost cases, many of these aspects interrelate with one another to effect on attitudes towards ICT. Becker et al. (1999) and Gobbo and Girardi (2001), indicated that there is a positive association between technology training and teachers' attitudes. Training can considerably impact the ways in which an educator comprises technology tools or devices in the teaching learning process. The study was conducted by various concerns from educational stakeholders that teacher-educators do not have attitude towards the potentials and effectiveness of technology used into the whole education process (Mselle, 2012).

ICT has brought many challenges and opportunities and influenced the world like no other invention in the recent past. The sphere of education has also got greatly influenced by ICTs, which certainly altered whole education process. (Yusuf, 2005). Hence the challenge for teacher education is to create a new generation of prospective teachers capable of employing a variety of technology tools into all phases of the educational process.

It is only possible when teacher educators in teacher training colleges have enough knowledge of ICT and the knowhow of successfully implementing ICT's tools and devices in all areas of teacher education program efficiently. Teacher educators are required to have adequate knowledge and use of ICT in education process in case they wish to utilize current techniques and technologies effectively for prospective teachers. (Kalogiannakis, 2010). However, research studies also show that most teacher-educators do not make use of the technological devices to contribute to the quality of teaching and learning environments (Smeets, 2005). The present paper explore to investigate the attitudes of teacher-educators and integrating ICT in teacher education process and raises the important questions like perception or belief of teacher-educators that ICT cannot enhance teaching learning process, anxiety of ICT and Its use in teacher education process and lack of enthusiasm, motivation & training of ICT use in education practices. This research paper also emphasizes the ICT tools and devices used by the teacher-educators in their teaching learning process to make education effective and to understand the concept in a better way. The aim of the present study is to appraise the attitude and integrating ICT in teacher education process by teacher-educators of different education colleges in the State of Haryana. The sample of the present study consists of 50 teacher- educators selected from various education colleges in the state of Haryana.

II. REVIEW OF RELATED LITERATURE

The attainment of any educational practices depends on the attitude of the teachers' towards incorporating ICT in teaching learning process. Teacher's positive attitude towards the blending of ICT and its tools and devices in teacher education process is an important issue because teachers' attitudes have been established to be a foremost forecaster of assimilating ICTs in educational process. (Abas, 1995a; Blankenship, 1998; Isleem, 2003). It has been advised that if educators view that projected technology as accomplishing neither their own or their learners' requirements, they are not feasible to endeavour to present ICT into their educational process. (Teo, 2008). Teacher's attitude plays a significant role in the acceptance and implementation of ICT in the teacher education process. It is extremely essential to understand the attitude of teachers towards ICT and its tools and devices usage in teaching learning process since they are among the major people that affect the successful use of technology in educational practices (Huang and Liaw, 2005). During the last twenty-five years, quite a few studies have been carried out about local, national and international possibilities about incorporating ICT in teacher education process. Developing the properties of teacher training through technology and (Cox, Preston, & Cox, 1999; Cavas, 2005) level of resources, teachers' pedagogies and trainings (Watson, 1998), and the consequences of computers and technology on students' attainment (Cox, Preston, & Cox, 1999; Cavas, 2005).

Still, some recent studies in this area have neglected teacher-educator's attitudes towards implementing ICT in teacher education process in order to produce effective prospective teachers. Recent studies indicate that teachers' attitudes toward integrating ICT have significant implications for their behaviours in the use of technology devices for teaching and learning purposes. (McCarrick & Li, 2007). However, some studies show that most of the teachers in US are well aware of ICT use in teaching learning process but many do not use it efficiently during classroom instructions. (Gray et al., 2010). Even educators with a great level of technological know-how and sureness still depended on a conventional teacher-centered approach (Prestridge, 2012). The efficient use of ICT enables educators to facilitate and regulate their teaching learning process to raise students' learning (Teo, Lee, & Chai, 2008). In this regard, when educator's role and work in this practice is taken into account then it is significant to recognize teachers' interest towards technology and their attitudes to integrate ICT in teacher education process (Erkan, 2004; Rohaan, Taconis & Jochems, 2010). Hence attitude of teachers inclines to be linked with a corresponding style of teaching and learning (Kagan, 1992). Teacher's attitudes and emotions also form the meanings they lead towards inventions such as assimilation of ICT in teacher education process. Therefore, changes to teaching style and strategy as well as implementing ICT in education process, may demand changes to teacher's attitudes (Albion & Ertmer, 2002).

However, research articles also show that the psychological individual features have been considered to a limited degree (Braak, 2001) and personality elements that may subsidise to teachers' willingness towards ICT and its fusion in education process have been largely ignored (Karpati, Torok, & Szirmai, 2008). Current findings advocate that the personality factors that predict inclination of educators towards the usage of ICT tools and devices in the teacher education process show teachers' openness to change (Perkmen & Cevik, 2010; Rachel & Fordham, 2004), common and particularly technological imaginativeness and extroversion. (Braak, 2001a, 2001b), while conscientiousness has also been established to be clearly related to teachers' stimulation towards usage of technology integration (Perkmen & Cevik, 2010). Additionally, it has been discovered that those teacher-educators who are publicly adaptive, broad-minded and sociable present great level of ICT fusion in teacher education process, in terms of attaining positive attitudes, skills of technology, and enabling good use of ICT tools and devices (Karpati, Torok, &Szirmai, 2008). Research Studies also identified that attitudes towards ICT integration and its usage in teaching learning process proved barriers for the teachers. One study (Fabry & Higgs 1997) distributed attitudes into three groups: self-assurance with ICT, anticipated relevance of ICT, and innovativeness. While attitudes partially build upon on personality (Guha 2000), the significance of earlier technology know-how is extensively acknowledged (Snoeyink & Ertmer 2001). Adverse experiences affect perceptions of the easiness of usage and significance of ICT, decreasing self-assurance and increasing nervousness. Technology nervousness and anxiety about change are crucial factors restraining teachers' attitude towards usage of ICT tools and devices in teacher education process (Larner & Timberlake 1995).

Underlying these nervousness are fear of awkward situation when using ICT tools and devices in teacher education process (Russell & Bradley 1997) and scare of falling professional position through a relegation of conventional pedagogical skills (Fabry & Higgs 1997). Yuksel et al (2013) categorised these blockades in outside and inner barriers. The outside obstacles contain hardware and software insufficiency, and being short of technical knowledge and time. The inside barriers contain approaches, philosophy and perceptions about utilizing the uses of equipment and technology in education, and the teaching learning practices.

Similar investigative studies have also described many barriers at the time of teachers' trying to put into practice ICT and its tools or devices into the teacher education process. Obstruction has been called a situation that does not shore up the success of purposes (Schoepp, 2005). Diverse groups of blockades have been explained by investigators that delay educators from functioning of ICT in teaching learning course. (Leggett & Persichitte 1998). A number of researchers categorize blockades to triumphant performance of ICT in two classifications: Extrinsic and inherent barriers. Extrinsic factors are concerned with shoring up, admittance to reserves and time. Whereas intrinsic aspects relate to attitudes, beliefs, observations, rehearsals and confrontation regarding ICT (Ertmer, 1999). In addition, previous barriers can be connected with deficiency of finance, absence of reserves to admittances, insufficient educators' training, and want for of internet broadband connectivity (Ch, et al, 2015). The other main hindrances that thwart educators from utilizing ICT efficiently are: a) shortage of time for ICT practice and training b) pitiable replicas for practice while ICT training, and c) Deplorable institutes management. Laaria (2013) and Kipsoi et al (2012). (Tsou, Wang & Tzeng, 2006) Technologies have performed a dominating function in the whole teaching process. Investigators have indicated that technology mixed into teaching learning procedure supports higher-level education and thinking skills amid students. It has been established to have positive effects in language education and it becomes as an essential part of education and adds as teaching equipment in the language classroom. There is a substantial amount of curiosity to study more about the possible use of ICT in education practices. Pelgrum (2001) recognized several causes why technologies have become important to education process because of lowering the price of education, lowering the price of ICT tools and devices, maximum use of technology world-wide, organizing students for work effectively and living in a machinery savvy world.

Meantime, a number of surveys show that the effective implementation of ICT in teaching learning process make educational practices more beneficial and effective and deliver a well learning engagement experiences. (Leask & Pachler, 2014). When used suitably ICT tools and devices into the teacher education process, ICT has high potential to improve teaching-learning skills of prospective teachers as well as enable them to compete with changing era (Haddad & Draxler, 2002; Oliver, 2005).

III. RESEARCH GAPS / QUESTIONS

Research gaps are also called the research questions or problem which has not been answered appropriately or at all

in a given field of study. Previous researchers have studied on the use of ICT in teaching learning process, many researchers have studied also on the attitude of teachers towards integrating ICT in teacher education process but nobody worked on the following areas of teachers' attitude towards integrating ICT in teaching learning process.

1) Attitudes of the teacher-educators' towards integrating ICT in teacher education process.
2) Perception of teacher-educators that ICT can not enhance teaching learning process.
3) Dread of falling professional prestige through relegation of conventional pedagogical skills.
4) Technology anxiety and anxiety about change trends in education field through ICT and its usage in teacher education.
5) How often teacher-educators use ICT in teaching learning process to make education effective?
6) How ICT in education has influenced the entire world and as well as the whole education process?
7) Impact of ICT on learning and achievement in the educational process.
8) How can ICTs be effective in future for educational process and what are the implications of such impact?

IV. OBJECTIVES OF THE STUDY

Followings are the objectives of the study:

- To study the attitude of teacher educators towards integrating ICT in teacher education process.
- To examine the knowledge and levels of ICT tools and devices use by teacher educators in teacher training colleges.
- To ascertain lack of technical support and training of ICT among teacher-educators.
- To find out the anxiety of ICT and its usage as well as lack of enthusiasm, motivation towards use of ICT in teacher education process

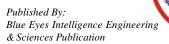## V. RESEARCH METHODOLOGY

A. SAMPLE

The research participants were the teacher-educators of education colleges working in the state of Haryana. At least 50 teacher-educators were selected for this research. The sample selection made use of purposive sampling procedure.

B. PROCEDURE

In the present study, data were recorded during interviews and field notes. The names and email addresses of the respondents were not revealed in order to maintain secrecy.

C. TOOL USED

A self-prepared interview guide was used to collect qualitative data. These qualitative data were read verbatim and analyzed via appropriate software where themes related to the research questions were coded.

D. ANALYSIS PROCEDURE

After collecting the qualitative data from 50 teacher educators working in teacher training colleges at the State of Haryana, these qualitative data were interpreted by using MS-Word software by creating Macros and explained appropriately.

Interview Guide

Sr. / No.	Questions
1.	How often do you use ICT tools and devices during teaching learning process?
2.	Do you enjoy teaching with ICT tools and what you think how ICT can increase learning power of students?
3.	Do you develop your lesson plan with PowerPoint presentation or some other software?
4.	Do you use Facebook, Twitter or other social networking sites for educational purpose?
5.	How often do you facilitate learning by using web conferencing and virtual classrooms?
6.	Have you got ICT-training to improve your teaching-learning skills?
7.	Do you feel confident to use technology during teaching learning process?
8.	Do you use laptop, projector during teaching learning process?
9.	How often do you update your knowledge and skills by reading online journals and develop your own notes?
10.	Do you think ICT help students to learn effectively & helpful for future teachers?
11.	Do you appreciate computer or other technology tools or devices during teaching?
12.	Do you feel anxiety about the introduction of ICT in educational process?
13.	How often do you attend any ICT related training, workshops to improve your pedagogical skills?
14.	Do you think lack of technical support and ICT-training proving as obstacles for incorporating ICT tools and devices in education process?
15.	Do you think, poor infrastructure, limited funds, lack of enthusiasm, and motivation proves as barriers to integrate technology with education process?

VI. DATA ANAYSIS & INTERPRETATION

All the interviews were digitally recorded with the consent of each participant. The process of recording interviews by the different respondents took ten to fifteen days. The next step was the transcription, the transformation from recorded and hand-written data into a written mode. The researcher used MS-Word Software to type recorded data into written mode which took 12 pages to write all recorded data from different respondents. After that codes were generated by using Macros (MS-Word). In this study 183 codes were generated representing 5 major themes presented in Table 1.1 and Table 1.2. A matching and similar comment to be sorted into categories within each major theme. This sorting, matching, and collating of data into similar categories organized the framework for data analysis and discussion, and enabled a cohesive and integrated flow of information.

Coded data in Sorted form under Different Heading (Themes)

Themes	Textual Data
ICT	Textual data of Code 2: "Yes, I use laptop during teaching even I elaborate each and every concept with PowerPoint presentations."
	Textual data of Code 15: "all lecture on PowerPoint presentation to make effective teaching learning process."
	Textual data of Code 17: "I also use audio-visual aids during "
	Textual data of Code 19: "I have one personal laptop even my college management has also provided me a laptop and fast speed internet connection"
	Textual data of Code 20: "Even we all other staff members have laptop and they are instructed by the principal to make electronic lesson and deliver to student. "
	Textual data of Code 21: "we all teachers use technology during teacher learning process and it is also instructed by the principal too "
	Textual data of Code 30: "I do not use regularly and yes we have well equipped computer laboratory in our college."
	Textual data of Code 34: "these software's and increases the retention power of the students"
	Textual data of Code 37: "ICT has influenced the education process and it has proved a boon in educational practices even "
	Textual data of Code 41: "Yes, ICT has proved boon in education process it has strong impact on teaching learning process and it is need of the hour to become technology literate if we want to take full benefit of ICT in relation to education."

	Textual data of Code 47: "Whenever I find difficulty to learn any topic and I am not getting in books then I use Google and Youtube"
	Textual data of Code 49: "Sometime when we use ICT tools and devices during teaching learning process and suddenly power supply goes off and any computer or laptop halt then only traditional method and teaching with the help of blackboard or whiteboard is only the solution to teach to the students."
	Textual data of Code 50: "ICT can only assist in teaching and learning process but cannot replace teacher. It can only be used as teaching aid to make lesson effective and even whole education process. "
	Textual data of Code 52: ": I did not deliver any digital lesson"
	Textual data of Code 54: "But lack of training of ICT becomes a major problem for the teacher educator to learn ICT completely."
	Textual data of Code 57: "I also have less knowledge of ICT tools and devices and I always prepare my lesson in a traditional way. In fact, ICT can help students to learn effectively"
	Textual data of Code 61: "Really ICT has brought these changes in the field of education."
	Textual data of Code 62: "ICT has brought these changes in the field of education."
	Textual data of Code 71: "ICT is more wastage of time"
	Textual data of Code 85: "ICT tools and devices."
	Textual data of Code 168: "Really ICT has brought these changes in the field of education." Textual data of Code 178: "ICT is more wastage of time"
	Textual data of Code 90: "es I have received ICT-related training."
	Textual data of Code 102: "ICT tools and devices "
	Textual data of Code 108: "Yes I have received ICT-related training."
	Textual data of Code 110: "and total 50-56 hours total in my B. Ed. course"
	Textual data of Code 116: "ICT as teaching aid"
	Textual data of Code 129: "It make them well versed with the ICT & hence "
	Textual data of Code 131: ": I did not deliver any digital lesson"
	Textual data of Code 133: "But lack of training of ICT becomes a major problem for the teacher educator to learn ICT completely."
	Textual data of Code 136: "I also have less knowledge of ICT tools and devices and I always prepare my lesson in a traditional way. In fact, ICT can help students to learn effectively"
	Textual data of Code 138: ": I did not deliver any digital lesson"
	Textual data of Code 140: "But lack of training of ICT becomes a major problem for the teacher educator to learn ICT completely."
	Textual data of Code 143: "I also have less knowledge of ICT tools and devices and I always prepare my lesson in a traditional way. In fact, ICT can help students to learn effectively"
	Textual data of Code 147: "Really ICT has brought these changes in the field of education."
	Textual data of Code 157: "ICT is more wastage of time"
Attitude	Textual data of Code 9: "I cannot think teaching WITHOUT ICT."
	Textual data of Code 13: "it is amazing process to teach to students with ICT tools and devices. I always carry laptop and internet dongle to run internet anywhere"
	Textual data of Code 23: "I hardly use computer or laptop during teaching. I think traditional methods are more effective for these students"
	Textual data of Code 24: "But Our management does not provide any ICT training to the teacher and they are in the process of minting money and nothing else"
	Textual data of Code 25: "But Our management does not provide any ICT training to the teachers and minting money and nothing else."
	Textual data of Code 35: "My perception towards ICT is that it is a major tool to increase the levels of students as well as the teachers in present scenario." Textual data of Code 38: "have their own pros and cons"
	Textual data of Code 40: "As far as my views are concerned both traditional and teaching through ICT tools and devices are helpful for learners."
	Textual data of Code 39: "I think that both methods have their own pros and cons.
	Textual data of Code 43: "I enjoy while using ICT tools and devices and it makes permanent learning to the students as well as increases the teaching skills of the teachers also"
	Textual data of Code 63: "and I really enjoy teaching with ICT tools and devices."

	Textual data of Code 69: "I do not use computer or laptop more during teaching learning process"
	Textual data of Code 74: "I don't use ICT devices and tools but I have lot of interest to teach with these devices."
	Not often but occasionally I deliver lessons with the help of PowerPoint presentation. "
	Textual data of Code 78: "I enjoy technology during my teaching learning process"
	Textual data of Code 83: "Most of the time I teach with traditional methods during teaching learning process."
	Textual data of Code 92: "and I think that every teacher should have knowledge of ICT "
	Textual data of Code 183: Not often but occasionally I deliver lessons with the help of PowerPoint presentation. "
	Textual data of Code 96: "I do not use computer or internet much during teaching learning process. "
	Textual data of Code 185: "I enjoy technology during my teaching learning process"
	Textual data of Code 181: "I don't use ICT devices and tools but I have lot of interest to teach with these devices."
	Textual data of Code 175: "ICT assist me lot to increase my knowledge and also my teching skills."
	Textual data of Code 170: "and I really enjoy teaching with ICT tools and devices."
	Textual data of Code 98: "Excess of everything is bad"
	Textual data of Code 164: "I enjoy technology during my teaching learning process"
	Textual data of Code 162: " Not often but occasionally I deliver lessons with the help of PowerPoint presentation. "
	Textual data of Code 160: "I don't use ICT devices and tools but I have lot of interest to teach with these devices."
	Textual data of Code 155: "I do not use computer or laptop more during teaching learning process"
	Textual data of Code 154: "me lot to increase my knowledge and also my teaching skills."
	Textual data of Code 149: "and I really enjoy teaching with ICT tools and devices."
	Textual data of Code 125: "It is the need of hour even if teacher has knowledge of ICT, he can teach in better way."
	Textual data of Code 123: "It was great experience to learn ICT related training and "
	Textual data of Code 104: "there is no alternate of a good teacher"
	Textual data of Code 127: "Yes training in ICT build confidence among the pupil "
	Textual data of Code 118: "No I do not use more practicals with the help of computer in laboratory"
	Textual data of Code 114: "I hardly given any project or assignment to students by using computer"
Teacher Educator	Textual data of Code 4: "ICT really makes interesting classroom environment & make teaching learning process successful.
	Textual data of Code 7: "ICT has increased the pace of teaching learning process "
	Textual data Code 31: "There is no motivation given to teachers and we r"
	Textual data of Code 32: "Mostly I use educational software during teaching learning process. It has great impact on learning of the students. "
	Textual data of Code 87: "lack of motivation "
	Code: 106 Teacher Educator Textual data of Code 106: "ICT tool and devices as teaching aid in teaching learning process"
	Textual data of Code 100: "due to lack of resources and enthusiasm "
Educational Material	Textual data of Code 11: "Yes, I daily use internet and email account"
	Textual data of Code 28: "I use internet, email account occasionally."
	Textual data of Code 32: "Mostly I use educational software during teaching. It has great impact on learning of the students. "
	Textual data of Code 65: "internet anywhere"
	Textual data of Code 145: "Yes, I daily use internet".
	Textual data of Code 151: "internet anywhere"
Role of Management	Textual data of Code 26: "They even do not provide ICT resources and teachers in this college do not have knowledge of computer"

	Textual data of Code 56: "Even our management do not provide any kind of ICT training from last 8 years in this college."
	Textual data of Code 159: "Even our management also have lack of funds or infrastructure to fulfill these demands."
	Textual data of Code 120: "lack of resources and maintenance "
	Textual data of Code 121: "But lack of resources in my college "
	Textual data of Code 89: "management do not bother regarding it."
	Textual data of Code 180: "Even our management also have lack of funds or infrastructure to fulfill these demands."

Distribution of Teacher Educators' Conceptual Statements in Categories within Emergent Themes

Theme	Category	(Frequency)
ICT	• Levels of ICT • Tools and Devices • ICT Skill • Laboratory • ICT training	70
Attitude	• Positive Attitude • Negative Attitude • Perception • Tendency • Thinking about ICT	71
Teacher Educator	• Classroom Teaching • Teaching and Learning • In-service Training • E-learning • Motivation • Enthusiasm	16
Educational Material	• CD • Internet • Multimedia • Educational software	12
Role of Management	• Lack of funds • Poor Infrastructure • Absence of resources	14
Total		**183**

VII. FINDINGS OF THE STUDY

Through the interviews, it became clear that the teacher-educators exhibited positive attitude to some extent towards integrating ICT in teacher education process. Some were of view that "*ICT has revolutionized the whole education system and it makes teaching learning process effective and efficient*". Some teacher-educators were eager to use ICT in teacher education process. Some demonstrated a highly positive attitude towards the ICT tools and devices usage in their daily teaching learning process. As one of them admitted, "*It is the need of hour even if teacher-educator has knowledge of ICT, they can teach in better way to prospective teachers*". Another teacher-educator revealed, "*I always prepare my lessons using PowerPoint presentation and download the subject material from internet*".

Some were of the views that due to certain problems like lack of ICT-training, technical-support, self-confidence in using ICT skills and knowledge and difficult to use ICT tools and devices, they were not embedding ICT into practice during teaching learning process. As one of them accepted, "*the teachers are not able to cope with the demands, only a few are able to use the machines*". Another confessed that "*I*

hardly use ICT tools and devices during teaching and give any project or assignment to students using computer".

This study also exposed that some teacher-educators did not get sufficient knowledge of ICT and thus they did not know how to make use of ICT tools and devices in teaching learning process. The present study also disclosed that some were facing problems of necessary teaching-skills in order to teach students. They did not get much knowledge of basic skills-of-teaching and thus were unable to teach effectively students. They did not know the basics things of teaching methodology and as a result they were incapable of fusing ICT and its tools in teacher education process. Some showed negative attitude towards the use of ICT in teaching learning process. As one of them admitted, "ICT cannot replace teacher and enhance teaching-learning process therefore I always prepare my lesson using traditional approach".

Another admitted that "Sometime when we use ICT tools and devices during teaching learning process and suddenly power supply goes off and any computer or laptop halt then only traditional method and teaching with the help of blackboard or whiteboard is only the solution to teach to the students. To teach with ICT tools and devices is wastage of time".

Certain teachers were facing problems of ICT resources, even they did not keep proper computer laboratory in the college and even management of the colleges also did not bother regarding use ICT-implementation in education process. As one of them disclosed, *"The management of the colleges are mushrooming in making the money and not providing any infrastructure to teach students in a better way".* As a result of one of them also revealed that, *"Due to the lack of training and resources they do not put ICT in practice".*

Some were of view that due to negative experience with ICT in the previous, dread of awkwardness in front of apprentices and associates, lack of motivation and the enthusiasm towards ICT in teacher education process, they were facing many hurdles using ICT tools and devices during education process. As one of them confessed, *"I do not use computer or laptop during teaching learning process due to previous negative experience with ICT tools and devices during teach".* This fact also came into light that some lectures were teaching the subject of ICT in colleges but they were from other field and did not possess knowledge of ICT. As one of them accepted, *"I am a lecturer of Teaching of Social study but my higher authority instructed me to teach subject of ICT also".*

Through the interview it also became clear that the management of the colleges were also not supporting the teachers of their college. Management of the colleges don't allow educators to organize any educational events in the college and even they don't give permission to attend such kind of educational seminar or conference in other colleges too. Even they don't bother to provide well equipped ICT-laboratory in the college and not completing the norms and standards of the university or apex authority of teacher education process. As one of the them exposed, *"Education is a business for the management".*

During the interview and field notes, it came into light that teacher-educators has positive attitude towards the ICT and levels of technology usage in teacher education process but due to many problems faced by educators they were not employing ICT in teacher education process. If ICT-training, resources of ICTs, motivation, support of management and technical support besides benefits of ICT in education process acquainted to the teacher-educators then they can integrate ICT in teacher education process efficiently. As one of them admitted that, *"Really ICT has brought revolution in the education process but our management does not allow us to participate in ICT-training, workshops etc".* As one of them also confessed that, *"I have less knowledge of ICT but due to lack of motivation or enthusiasm I am unable to integrate ICT fully during my lesson".*

VIII. DISCUSSION AND CONCLUSION

The purpose of this study was to investigate the attitude of teacher-educators towards the use of ICT along with knowledge and levels of ICT tools and devices usage and to ascertain lack of technical support also anxiety during teaching learning in teacher training colleges.

It was found that teacher-educators have positive attitude to some extent towards the ICT and its tools and devices usage in teacher education process but due to many complications faced by them, they were not embedding ICT in teacher education process. The present finding reveals that teacher-educators have lack of training and technical support from the government as well as management of the teacher-training colleges. The present study also exhibits that teacher-educators also have some anxiety towards using ICT tools and devices during teaching learning process. As well as teacher-educators also lack of motivation and enthusiasm towards the use of ICT tools and devices in teacher-education process. If ICT-training, technical support, resources of ICTs, motivation, support of management as well as benefits of ICT in education process acquainted to the teacher-educators then they can successfully incorporate ICT in teacher education process. It is greatly hoped that the present study would be utilized to understand the teacher-educators' attitude towards ICT in teacher education as well as knowledge and levels of ICT tools and devices used by teacher-educators during education process. The present study would also be employed to find out the anxiety, lack of technical support and training to teacher-educators in teacher education process and to make improvements and enable them a techno-pedagogue.

IX. SUGGESTIONS

With the advent of ICT, there has been a move from general Literacy to ICT Literacy. Now a days ICTs tools and devices have their utility in almost every sphere of life. The world of education has also been impressively influenced by the increase use of ICT in teacher education process. ICT is used in schools, colleges, universities to make effective teaching learning process. So, the knowledge and its usage in teaching learning process is must for the teacher-educators as they are the backbone of the whole education system. If they don't have the knowledge of ICT and its tools and devices effectively used in teaching learning process and also attitude of teacher-educator towards ICT integration in teacher education process, they cannot teach effectively to prospective teachers.

Hence it is essential for the teacher-educators to become technology savvy so that they can teach efficiently to their pupil-teachers and also provide them latest knowledge for their better future as well as to compete with this electronic era. However following suggestions will be helpful to change the attitude of teacher-educators towards integrating ICT in teacher education process in positive way.

- Providing ICT training, technical support to teacher-educators by the management of the college.

- Identify the teachers who are lacking basic knowledge of ICT and arranging in-service ICT-courses, workshops for improving their skills by the government as well as management of the colleges.

- Efficiently scrutinize teachers during the process of interview for the college.

- Providing ICT resources, proper infrastructures including well-equipped laboratory with high speed internet connection in the colleges by the government as well as management of the college.

- Making ICT subject as compulsory subject in the curriculum as well as with other subjects too.

- Arranging ICT- related seminars and conferences in the college and also allow them to attend national and international seminars and conferences to improve their ICT skills in teaching learning process.

A. SUGGESTION FOR FURTHER STUDY

The present study was conducted on the teacher-educators of different education colleges in the State of Haryana. This study can be repeated on teachers and lectures of schools, degree colleges and other professional colleges. The present study was restricted to 50 teacher-educators of various education colleges in the State of Haryana. In further study large sample can be taken up even on the different state and national level. The same study can also be conducted on students of schools, colleges as well as pre-service teachers.

B. ADVANTAGES OF THE STUDY

However following points show the advantages or benefits of teacher's attitude along with knowledge and levels of ICT usage among teacher-educators in teacher-training colleges.

- Creation of a new generation of prospective teachers skilled of employing a variety of technology tools and devices into all phases of the educational process.

- Enhance instruction whereby interaction and immediate feedback can be supplied to support skill practice.

- Tool for teaching and learning itself, the medium through which teachers can teach and learners can learn.

- Used to illustrate real-world relevance through highly visual presentations that stimulate learning powers of the students as well as create greater enthusiasm for learning.

Hence it is essential for the teacher educators to show their positive attitude towards ICT as well as knowledge and levels of ICT usage during teaching-learning process in teacher-training colleges and to become technology literate so that they can teach effectively to prospective-teachers and also provide the latest knowledge to them for their better development and compete with this electronic era.

C. LIMITATIONS OF THE STUDY

Following limitations were faced during the process of interview.

- Some teacher-educators were not speaking openly towards ICT-integration in teacher education process and its usage in teaching learning process to enable efficient prospective teachers.

- Some were showing negative attitude during the process of interview and not cooperating fully.

- Some teacher-educators were feeling hesitation when they were in front of recording device.

- Some teacher-educators were not explaining completely regarding use of ICT in teacher education process and they were only giving answers briefly.

- Some teachers were not allowing us to conduct their interviews.

D. APPLICATIONS OF THE STUDY

- Introducing ICT subject as compulsory subject in the curriculum of teacher education program.

- Arranging ICT- related seminars and conferences in the teacher-training colleges to improve the ICT skills among teacher-educators which in turn beneficial for prospective-teachers.

- Providing ICT training, technical support to teacher-educators by the government as well as management of the teacher training colleges.

- Providing ICT resources, proper infrastructures including well-equipped laboratory with high speed internet connection by the government and administration of the teacher training colleges.

- Identify the teachers who are lacking basic knowledge of ICT and arranging in-service ICT-courses for improving their skills by the government as well as management of the teacher training colleges.

- Efficiently scrutinize teachers during the process of interview of ICT teachers in teacher training colleges.

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